IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of: Frédéric Bauchot	: :
	: Before the Examiner:
Serial No: 10/803,660	: Wilson W. Tsui
	:
Filed: 03/18/2004	: Group Art Unit: 2178
	:
Title: A METHOD AND SYSTEM FOR MANIPULATING LABELLED DATA FOR DATA ENTRY IN MANAGEMENT APPLICATIONS	: Confirmation No.: 6005 : : :

APPELLANTS' BRIEF UNDER 37 C.F.R. 41.37

Assistant Commissioner of Patents
Washington, D. C. 20231

Sir:

This is an appeal to a final rejection dated September 26, 2006 of Claims 1 – 9 and 12 – 19 in the Application. This brief is submitted pursuant to a Notice of Appeal filed on December 22, 2006 in accordance with 37 C.F.R. 41.31.

BRIEF FOR APPLICANTS - APPELLANTS

(i)

Real Party in Interest

The real party in interest is International Business Machines Corporation (IBM), the assignee.

(ii)

Related Appeals and Interferences

There are no other appeals or interferences known to appellants, appellants' representative or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(iii)

Status of Claims

Claims 10 and 11 are canceled from the Application and Claims 1 – 9 and 12 – 19 are finally rejected. This appeal concerns all the finally-rejected claims.

(iv)

Status of Amendment

An "Amendment After Final" was not filed.

(v)

Summary of Claimed Subject Matter

The invention, as claimed in Claim 1, provides a method for data entry into the content of cells belonging to an output field. The data is expressed as a mathematical expression of the cell contents of at least one input field in a data multidimensional table used by a data management application. The table comprises cells arranged as a grid of records and fields, wherein each cell corresponds to the intersection of one record with one field, and each cell is identified by a cell address and comprises a cell content. The table has one

specific record in which each cell content is entered as a unique character string label that identifies each table field. The method comprises the steps of entering labels corresponding to the at least one input field and a label corresponding to the output field, said later label being expressed as the mathematical expression of said labels of said at least one input field; parsing the label of the output field into a mathematical expression by identifying numeric operands, operators and the at least one existing input field label; translating in the mathematical expression, the at least one existing input field label into the address of the cell containing the at least one input field label; and for each cell of the output field, pasting in the cell content the translated mathematical expression and replacing in said pasted mathematical expression each cell address of the at least one input field label by the cell address of the at least input field belonging to the same record (see page 22, line 6 to page 23, line 21 and page 20, line 4 to page 21, line 7 as well as Figs. 3D and 3E).

The invention, as claimed in Claim 12, provides a computer program product on a computer readable medium for entering data into an electronic table. The table has at least one input column and at least one output column and at least a first and a second row. The first row is used to enter labels defining the at least one input column and the at least one output column and the second row is used to enter data into the table. The computer program product comprises code means for entering a first label into the at least one input column and a second label into the at least one output column, the second label being a mathematical expression that includes the first label and at least one operator; and code means for automatically entering data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression (see page 22, line 6 to page 23, line 21 and page 20, line 4 to page 21, line 7 as well as Figs. 3D and 3E). The code means of the

computer program product are the steps outlined on page 26, line 13 to page 31, line 7 and Fig. 7.

The invention, as claimed in Claim 16, provides a computer system that is used to enter data into an electronic table. The table has at least one input column and at least one output column and at least a first and a second row. The first row is used to enter labels defining the at least one input column and the at least one output column and the second row is used to input data into the table. The computer system comprises at least one storage device (main memories 102 and 103 and mass storage 107) to store code data; and at least one processor (central processor 101) for processing the code data to allow entry of a first label into the at least one input column and a second label into the at least one output column, the second label being expressed as a mathematical expression that includes the first label and at least one operator, and to automatically enter data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression (see page 22, line 6 to page 23, line 21 and page 20, line 4 to page 21, line 7 as well as Figs. 3D and 3E).

(vi)

Grounds of Rejection to be Reviewed on Appeal

Whether it was proper to reject Claims 1 – 4, 6, 8 and 12 - 19 under 35 U.S.C. §103(a) as being unpatentable over Salas et al. in view of Hatakeda et al.

(vii)

Arguments

Whether it was proper to reject Claims 1 – 4, 6, 8 and 12 - 19 under 35 U.S.C. §103(a) as being unpatentable over Salas et al. in view of Hatakeda et al.

It is a well settled law that in considering a Section §103 rejection, the subject matter of the claim "as a whole" must be considered and analyzed. In the analysis, it is necessary that the scope and contents of the prior art and differences between the art and the claimed invention be determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

Claims 1 and 12

Salas et al. purport to teach a data processing method for a reformattable multidimensional spreadsheet. In accordance with the teachings of Salas et al., a series of items forms a dimension along an axis of the spreadsheet. A label icon can be used by a user to describe the series of items of an axis. Repositioning of the label icons repositions respective series of items and thus redefines/rearranges the axes of the spreadsheet. Sub-axes to an axis are similarly formed by series of items associated with a respective label icon. Order of label icons in predefined areas of a working screen view determines hierarchy of main axis and sub-axes for the label icons. There is a different predefined area for possible vertical axes, possible horizontal axes, and possible orthogonal axes of a spreadsheet. A cell module holds spreadsheet data in a matrix of memory cells. A symbol table translates between current specified names of items in the spreadsheet and indexes to cells of the cell module. Thus, a user is able to rearrange and/or relabel icons in the spreadsheet screen view without losing data.

However, Salas et al. do not teach the step of **entering labels corresponding to the at least one input field and a label corresponding to the output field, said later label being expressed as the mathematical expression of said labels of said at least one input field** as claimed. Rather, Salas et al. advocate splitting a screen in two portions, a table portion and a

calculation portion. In the table portion, cells are arranged as a grid of input fields and output fields. Each column and/ row that make up the input fields and the output fields are labeled via titles. In the calculation portion of the screen, mathematical expressions that include the titles of the input and output fields are displayed (see Figs. 4A and 4B).

By contrast, the present invention uses mathematical expressions that include at least one input field to label the output fields. Thus, Appellants reiterate that Salas et al. do not teach the step of **entering labels corresponding to the at least one input field and a label corresponding to the output field, said later label being expressed as the mathematical expression of said labels of said at least one input field**.

Further, since Salas et al. do not teach the step of **entering labels corresponding to the at least one input field and a label corresponding to the output field, said later label being expressed as the mathematical expression of said labels of said at least one input** field (i.e., the output fields advocated by Salas et al. are not labeled using mathematical expressions), Salas et al. do not teach the steps of **parsing the label of the output field into a mathematical expression by identifying numeric operands, operators and the at least one existing input field label**.

The Examiner stated that Salas et al. teach the parsing step in col. 12, lines 35 – 57, Appellants disagree.

In col. 12, lines 35 – 57, it is disclosed:

> For example, item name "Saab" in a mathematical expression 45 denotes cells within the circled area 21 of FIG. 4a; and group name "U.S. Made" (FIG. 3b) in a mathematical expression 45 denotes group 62a items "Ford", "Chevrolet" and "Total" 59a (FIG. 3b) and all cells pertaining thereto. And shown in FIG. 4a "Actual:domestic:1987:Sports:Saab:net" in a mathematical expression 45 denotes cell 47a while "1987:Sports:Saab:Net" denotes a cell at 47a in each view (page) in the succession of views

> corresponding to the "comp" and "country" page dimensions.
>
> The input side 28 of the mathematical expression 45 denotes a computation by combining numeric values, textual values, reference notations, and mathematical operators and functions. The result of such a computation produces a multi-dimensional collection of results. This collection of results is then stored into the multi-dimensional collection of cells denoted by the output side 30 of the mathematical expression 45. If the dimensionality or size of the input and output sides 28, 30 of the mathematical expression 45 cannot be fully reconciled, some subset of either the input or output side 28, 30 of the expression is ignored.

Thus, in col. 12, lines 35 – 57, Salas et al. explain the relationship of the mathematical expressions to the columns/rows of the table and how the cells of the table are filled based on the mathematical expressions. However, Salas et al. do not teach the step of **parsing the label of the output field into a mathematical expression by identifying numeric operands, operators and the at least one existing input field label**.

It should nonetheless be noted that alphanumeric text is generally used to label columns/rows of a table. Thus in the present invention, unless the text that is used to label the output field is parsed for numeric operands and operators etc., it is interpreted as alphanumeric text. By contrast, Salas et al. advocate putting the mathematical expressions in a specific section, where entries in that section are interpreted as mathematical expressions. Thus, there is no need for Salas et al. to teach the parsing step.

The Examiner admitted that Salas et al. do not teach the step of pasting in the cell content the translated mathematical expression and replacing in said pasted mathematical expression each cell address of the at least one input field label by the cell address of the at least input field belonging to the same record. However, the Examiner asserted that Hatakeda et al. teach the step and

concluded that it would have been obvious for one skilled in the art to combine the teachings of the two references to arrive at the claimed invention.

Since Salas et al. do not the teach the step of entering labels expressed as mathematical expressions for the output fields and the step of parsing the labels etc., as shown above, even if the assertion of the Examiner regarding the teachings of Hatakeda et al. is true, the combination of the teachings of Salas et al. with those of Hatakeda et al. does not teach the claimed invention.

Claim 4

Claim 4 includes the limitations of "wherein the step of parsing the label includes a transformation of the cell content type from a character string into a computable mathematical expression."

As mentioned above, alphanumeric text is generally used to label columns/rows of a table. Thus in the present invention, since the label of the output field contains a mathematical expression, the text has to be converted from text to mathematical expression so that the aim of the invention can be achieved. By contrast, Salas et al. advocate putting the mathematical expressions in a specific section, where entries in that section are interpreted as mathematical expressions. Thus, there is no need for Salas et al. to teach the parsing step.

Hence Salas et al. do not teach the limitations of Claim 4.

Claim 16

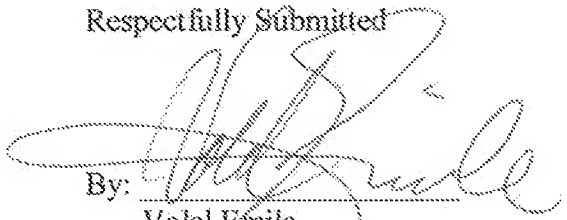
Claim 16 includes the limitations of "processing the code data to allow entry of a first label into the at least one input column and a second label into the at least one output column, the second label being expressed as a mathematical expression that includes the first label and at least one operator, and to automatically enter data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation

as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression."

As was argued in the Response to the previous Office Action, Salas et al. do not teach, show or suggest ***using a label expressed as a mathematical expression that includes another label to label a column in a table*** (i.e., a first label) ***and at least one operator*** as claimed.

Based on the foregoing, Appellants request reversal of the rejection and passage to issue of the claims in the Application.

Respectfully Submitted



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(viii)

Claims Appendix

1. (Previously presented) A method for data entry into the content of cells belonging to an output field, said data being expressed as a mathematical expression of the cell contents of at least one input field in a data multidimensional table used by a data management application, said table comprising cells arranged as a grid of records and fields, each cell corresponding to the intersection of one record with one field, each cell being identified by a cell address and comprising a cell content, said table having one specific record in which each cell content is entered as a unique character string label identifying each table field, said method comprising the steps of:

entering labels corresponding to the at least one input field and a label corresponding to the output field, said later label being expressed as the mathematical expression of said labels of said at least one input field;

parsing the label of the output field into a mathematical expression by identifying numeric operands, operators and the at least one existing input field label;

translating in the mathematical expression, the at least one existing input field label into the address of the cell containing the at least one input field label; and,

for each cell of the output field, pasting in the cell content the translated mathematical expression and replacing in said pasted mathematical expression each cell address of the at least one input field label by the cell address of the at least input field belonging to the same record.

2. (Previously presented) The method of claim 1 further comprising the step of replacing the output field cell contents by a computed mathematical expression applied to the cell contents corresponding to the cell addresses of the at least input field belonging to the same record.

3. (Previously presented) The method of claim 1 further comprising the step of:

repeating the preceding steps to compute the content of the cells of any additional output field in the table, wherein said content can be expressed as a mathematical expression of the cell contents of at least one input field.

4. (Previously presented) The method of claim 1 wherein the step of parsing the label includes a transformation of the cell content type from a character string into a computable mathematical expression.

5. (Previously presented) The method of claim 1 wherein the mathematical expression comprises complex operators developed as functions in the data management application.

6. (Previously presented) The method of claim 1 further comprising an initial step of selecting the input and output fields forming the data multidimensional table in a larger data multidimensional table.

7. (Previously presented) The method of claim 1 wherein after the step of entering labels, the following steps are executed only if a further step of starting computation of the cell contents of the output field is triggered.

8. (Previously presented) The method of claim 1 wherein the fields and records are respectively the columns and rows if the data multidimensional table is vertically arranged or are respectively the rows and columns if the data multidimensional table is horizontally arranged.

9. (Previously presented) The method of claim 1 wherein the specific record in the data multidimensional table is respectively the top record in a vertically arranged table and the first left record in a horizontally arranged table.

10. Canceled.

11. Canceled.

12. (Previously presented) A computer program product on a computer readable medium for entering data into an electronic table, the table having at least one input column and at least one output column and at least a first and a second row, the first row for entering labels defining the at least one input column and the at least one output column and the second row for entering data into the table, the computer program product comprising:

code means for entering a first label into the at least one input column and a second label into the at least one output column, the second label being a mathematical expression that includes the first label and at least one operator; and

code means for automatically entering data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically

entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression.

13. (Previously presented) The computer program product of claim 12 wherein when the table has two or more input columns, two or more labels are used to define the two or more input columns, the second label, as a mathematical expression, includes the two or more labels such that when the user enters data into the second row at a location under the two or more labels, the data automatically being entered into the second row at a location under the second label is a result of a mathematical operation as defined by the mathematical expression in the second label.

14. (Previously presented) The computer program product of claim 12 further comprising:

code means for parsing the second label to identify operands, and the at least one operator of the mathematical expression;

code means for translating the mathematical expression into code; and

code means for entering the code, into which the mathematical expression is translated, into the second row at a location under the second label before data is entered into the table.

15. (Previously presented) The computer program of Claim 14 wherein data is automatically entered into the second row at the location under the second label when triggered to do so.

16. (Previously presented) A computer system used for entering data into an electronic table, the table having at least one input column and at least one output column and at least a first and a second row, the first row for entering labels defining the at least one input column and the at least one output column and the second row for inputting data into the table, the computer system comprising:

at least one storage device to store code data; and

at least one processor for processing the code data to allow entry of a first label into the at least one input column and a second label into the at least one output column, the second label being expressed as a mathematical expression that includes the first label and at least one operator, and to automatically enter data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression.

17. (Previously presented) The computer system of claim 16 wherein when the table has two or more input columns, two or more labels are used to define the two or more input columns, the second label, as a mathematical expression, includes the two or more labels such that when the user enters data into the second row at a location under the two or more labels label, the data automatically being entered into the second row at a location under the second label is a result of a mathematical operation as defined by the mathematical expression in the second label.

18. (Previously presented) The computer system of claim 16 further wherein the code data is processed to parse the second label to identify operands, and the at least one operator of the mathematical expression, to translate the mathematical expression into code, and to enter the code, into which the mathematical expression is translated, into the second row at a location under the second before data is entered into the table.

19. (Previously presented) The computer system Claim 18 wherein data is automatically entered into the second row at the location under the second label when the computer system is triggered to do so.

(ix)

Evidence Appendix

None.

(x)

Related Proceedings Appendix

None.